(No Model.)

A. McKENNEY.

RAILROAD TIE.

No. 372,230. Patented Oct. 25, 1887.

Fig. 2.

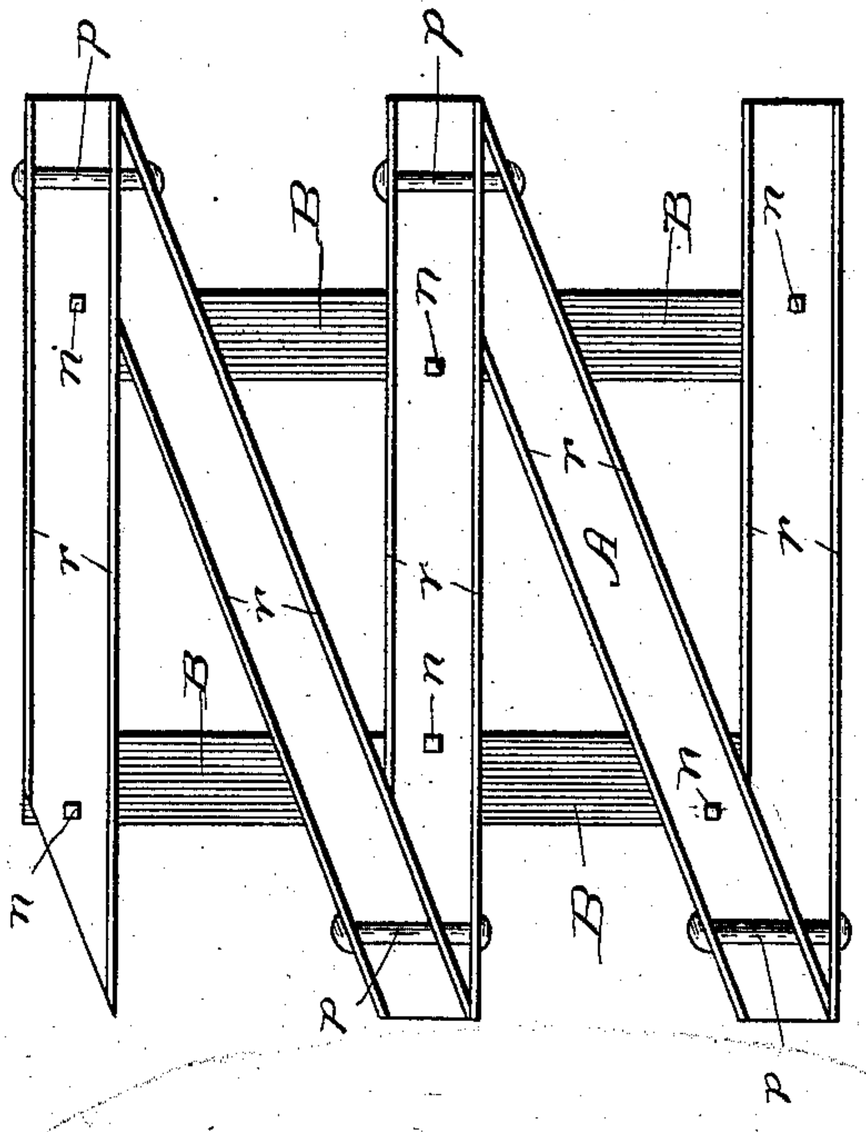


Fig. 4.

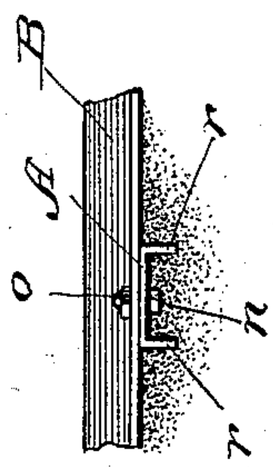


Fig. 1.

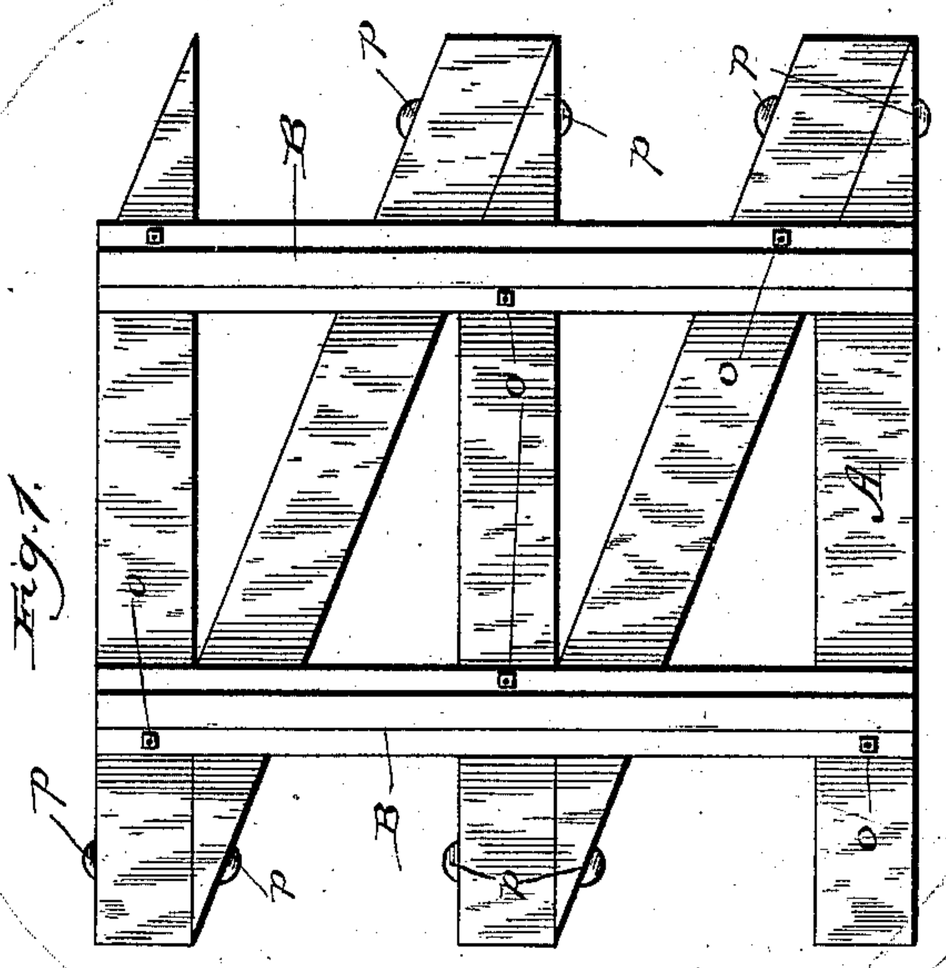
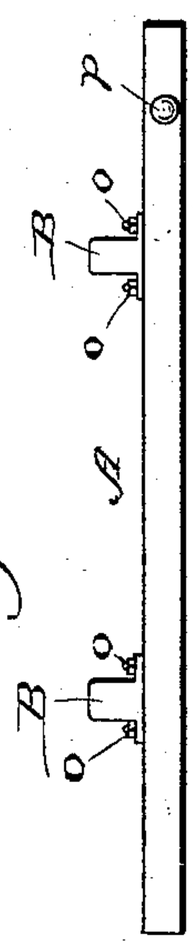


Fig. 3.



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UNITED STATES PATENT OFFICE.

ALMERON McKENNEY, OF ENGLEWOOD, ILLINOIS.

RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 372,230, dated October 25, 1887.

Application filed June 16, 1887. Serial No. 241,513. (No model.)

To all whom it may concern:

Be it known that I, ALMERON MCKENNEY, a citizen of the United States, residing at Englewood, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Railroad-Ties; and I hereby declare the following to be a full, clear, and exact description of the same.

My improvement relates particularly to the construction of metallic ties, though one feature of my said improvement—namely, that of laying the ties in zigzag order, hereinafter described—may also be applied to wooden ties.

The common manner hitherto practiced of laying the ties all parallel to each other transversely across the road-bed is objectionable, principally because the ties are subject to displacement both laterally and longitudinally, and thus render liable the throwing out of line or gage of the rails and require constant attention and repairing, with the consequent expense, to prevent disastrous results from such displacement.

It is my object to provide a construction of tie whereby the objections above stated shall be overcome and smoothness in the track afforded; and to this end my invention consists in a railroad-tie beveled transversely at one end and straight transversely at the opposite end, whereby the said tie is adapted to be secured to the side of the adjacent tie.

It also consists in a metallic railroad-tie beveled transversely at one end, straight transversely at the opposite end, whereby the said tie is adapted to be secured to the side of the adjacent tie, and flanged laterally; and it further consists in details of construction and combinations of parts, all as hereinafter more fully set forth.

In the drawings, Figure 1 is a top plan view of several of my improved metal ties secured together and supporting sections of rails, to show the manner of placing the ties for the purposes of my improvement. Fig. 2 is a bottom view of that which is shown in Fig. 1. Fig. 3 is an end elevation of the same, and Fig. 4 is a broken view of a rail in side elevation transversely on one of my improved ties, shown in end elevation, and having the ballast tamped down about the tie-flanges.

A A are metallic ties—of iron or steel—provided with lateral flanges *r*. The ties are cut from flanged plates, each thirty feet long and seven inches wide, and which is run upon a turnstile provided with rollers to permit the heated plate to be moved endwise to shears. The first cut is made at a desired distance from the end and is diagonal across the plate, and the next cut the desired distance from the end of the bevel produced by the first cut, but straight across, the operations of beveled and straight cutting being performed alternately to produce lengths each beveled at one extremity and straight at the opposite extremity. The next step, after cutting the plate into lengths, as described, is to provide transverse openings through the flanges of each one near each extremity, through which to pass bolts for securing the ties together, as hereinafter described, which openings are elongated, if provided to receive a certain form of bolt, hereinafter referred to, or round, if the common form of bolt is employed; and bolt-holes to receive the bolts for securing the rails to the ties are also provided in any desired number and in proper position.

The ties are laid on the road-bed in zigzag relative position, as shown—that is to say, one tie is laid straight across the road-bed, the next is adjusted at its straight end to the bevel on one end of the first-laid tie, whereby the bevel on the opposite end of the tie laid after the first extends transversely to the track, to permit the adjustment to it of the third tie, and so on. As the ties are cut all precisely alike, it is of course necessary, as will be understood, in order to lay them in the manner described, that one-half of the ties be inverted to afford to those directly transverse to the track one bevel, and to those obliquely transverse to the track the opposite bevel. When laid, the ties are secured together by bolts passed through the transverse openings hereinbefore referred to, which coincide in the adjacent ties, and then the ballasting is tamped down in the usual manner to set the ties firmly. I prefer to use for securing the ties together double-headed bolts *p*, of the construction shown and described in Letters Patent of the United States No. 117,657, granted me on the 1st day of August, 1871, and having each a one-eighth-inch shoulder and a slanting bearing to con-

form to the slant of the alternate ties, so that, the elongated openings referred to being provided, when the laterally-flattened head of a clamp-bolt is pushed through such an opening, by turning it one fourth around the beveled surface of the shoulder draws the two adjacent parts of the ties together and firmly holds them. If common bolts with nuts are used, it is necessary to place beveled washers under the heads and nuts.

The rails B are fastened to the ties by bolts *n*, inserted into bolt-holes in the rail-flanges and into those provided, as aforesaid, for the purpose in the ties, and secured by nuts *o*.

It will be seen that the construction of ties which permits the manner of laying them herein described and shown affords broad bearing-surface for the rails and causes the ties to cover more than one-half the surface of the road-bed, leaving angular spaces between them, which, being filled with the ballast tamped down, makes a practically continuous homogeneous bed, wherein the ties are liable neither to lateral nor longitudinal displacement, and are as durable as the metal of which they are formed.

With my improved tie uniformly fine gravel or concrete may be used to advantage as a surface dressing for the bed.

It is advisable before laying the ties to coat them with some preservative—such as coal-tar—to aid them in resisting corrosion.

What I claim as new, and desire to secure by Letters Patent, is—

1. A railroad-tie beveled transversely at one end and straight transversely at its opposite end, whereby the said tie is adapted to be secured to the side of the adjacent tie, substantially as and for the purpose set forth.

2. A laterally-flanged metallic railroad-tie beveled transversely at one end and straight transversely at its opposite end, whereby the said tie is adapted to be secured to the side of the adjacent tie, substantially as and for the purpose set forth.

3. A laterally-flanged metallic railroad-tie beveled transversely at one end, straight transversely at its opposite end, and provided with horizontal transverse bolt-holes through the flanges near opposite ends and with vertical bolt-holes in its body, substantially as and for the purpose set forth.

4. The combination, with the bed of a railroad, of metal ties A, each beveled at one extremity, laid in zigzag relative position, and bolted together near their contiguous extremities, and supporting rails B, secured upon them, substantially as described.

5. The combination, with the bed of a railroad, of laterally-flanged metal ties A, each beveled at one extremity, laid in zigzag relative position, horizontal bolts *p*, securing the ties together near their contiguous extremities, and rails B, secured upon the ties across their contiguous ends, substantially as described.

ALMERON McKENNEY.

In presence of—
J. W. DYRENFORTH,
GEORGE C. COOK.